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PRINCIPLES INVOLVED IN FIXING THE PRICE OF MILK.¹

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With the advent of the war, most farm management men followed the American economists, who had grave misgivings concerning any policies of price fixing. Our economic literature has maintained in general that legally fixed prices are either futile or harmful except in the case of monopoly.

The difficulty of maintaining fixed prices at a point satisfactory to buyers and sellers, the danger of forcing legitimate industry into serious situations, and the risk of curtailing or shifting production have been the primary arguments against such governmental policies, all of which have been abundantly illustrated from the records of such attempts.

Price fixing policies may be said to rest upon legal forces, moral forces, and economic forces. Legal forces rest with physical power which is administered by certain governmental agencies. Moral forces exert their power through honor, public commendation, disgust, and social ostracism. Economic forces exert their influence by changes in production and consumption. The sudden change in our policy from freedom of control to our present day complicated system of price control has outstripped theory.

Our present policy of fixing prices can not be said to be a complete failure as predicted by some, nor can it be said to be a complete success. Success of governmental agencies involved in price fixing rests on the fact that these agencies have been guided by economic forces and have been supported by moral and legal forces. Artificial price-fixing policies must be flexible enough in order that these artificial restrictions will act more or less in the same way as an increase or decrease in consumption, which will be sufficient to counteract changes in supply. Economic forces are, no doubt, dominant, but legal and moral forces may play a large part.

¹ Paper read before the American Farm Management Association at Baltimore, Maryland, January, 1919.

HISTORICAL ASPECT.

Except in the case of monopoly, the Anglo-Saxon race has experienced little or no price fixing since the mediæval period. The church was not only dominant during the mediæval period, as now in the religious life of peoples, but played a large part in both the political and economic sphere. Without our modes of transportation and means of storing food from seasons of plenty to seasons of scarcity, the poorer classes suffered from food shortages and the wealthier classes often reaped large profits at the expense of the more unfortunate. To counteract the suffering of the poorer classes, the church, often regulating prices without regard to economic phenomena, was usually unsuccessful. Following the experience of the mediæval period, which attempted to regulate prices by moral force, the English economists roundly denounced all kinds of price interference. From the time of Mill until the present day, the world has experienced freedom from price regulations. Everything was left to supply and demand. The consumer protected himself against high prices through decreased consumption and the producer by decreased production. With freedom of trade and our enormous production, both parties were well safeguarded.

With the advent of the war, restriction of commerce, and the demands on our food stuffs, substitution did not entirely prohibit the rapid increase in prices. Regulation was demanded as consumers' incomes were not at first commensurate with increased prices. Laborers and farmers alike demanded protection. Low prices were desirable from a social standpoint and high prices from an economic standpoint. Recognizing the divergent interests, President Wilson appointed Mr. Hoover as Federal Food Administrator.

URBAN MILK INDUSTRY.

The problem of maintaining an adequate supply of milk in large municipalities like New York and Chicago has been the subject of much investigation, discussion, legislation, and yellow journalism. Prior to 1917, the interest in municipal milk centered around the sociological rather than the economic phases. Legal enactments demanded the slaughter of all tubercular cows. Sensational propaganda portrayed milk as the cause and carrier of much disease. The tuberculosis question, health regulations, and other phases so adaptable to sensationalism were pushed to the background when the economic aspect became acute in the fall of 1917.

CONCENTRATION OF BUYERS AND SELLERS.

In most of the cities of the United States, a large part of the milk is distributed by a few large dealers. Twenty or twenty-five years ago the milk distribution was in the hands of a large number of small dealers. Since that time there has been a gradual concentration in the hands of a smaller and smaller number of distributors until in the past few years a relatively large part of the industry has been in the hands of two or three large concerns.

The growth of large distributors made the farmers suspicious that no such industry could be built up unless it was at the expense of exorbitant profits. This suspicion was gradually incensed by the standard prices set by these large dealers which the smaller dealers always followed. Producers felt that competitive prices did not exist and that monopoly price was the natural result of the partial monopoly purchase. The dairymen thus incensed passed through the successive stages of secret organization from local meetings and county organization to the present powerful associations unrestricted by state lines. The latter organizations have become effectual forces for collective bargaining.

The first successful action of the dairymen's organization culminated in the strike in April, 1916, by Chicago producers. New York producers who followed immediately were equally successful. Until November of 1917 they were probably the dominant force in determining prices. At that time the Food Administration interfered and price fixing by disinterested parties followed.

PRICE FIXING AND MILK.

With the advent of the United States Food Administration, milk prices became a mooted question. Unfortunately the Food Administration had no definite policy with regard to the milk question. This vacillating policy produced much dissatisfaction within the industry. The first step was to regulate prices, but unfortunately without serious consideration they contemplated a reduction in prices at a time of the year when prices always increased regardless of the price level. The Food Administration then assumed a "let-alone" policy which however did not last long and was followed by the appointment of sectional commissions as they felt that the question of milk prices was sectional and not national. The commission policy can not be described as successful and with the closing days of the war we find the Food Administration drifting towards some national system similar to that first attempted.

In some sections where policies were unsuccessful, all that economists predicted of price fixing followed. In Chicago production was seriously curtailed. In San Francisco distribution was unsuccessfully tampered with.

After a study of the testimony before numerous commissions, articles, discussions, and conversations, one finds that the price of milk should be based upon: (1) Supply and demand, (2) price of butter and cheese, (3) price of butter and corn, (4) competitive commodity prices, (5) year ratios of feed and labor.

I. SUPPLY AND DEMAND.

The so-called "Law of Supply and Demand" has been advocated by most persons acquainted with the milk situation as the best method of determining proper values. One objection to this method of arriving at just prices is that during periods when surplus milk is available, buyers may dictate prices without regard to justice. The same may also be said of farmers' organizations during periods of shortage. Under a system of higgling or bargaining over prices there may be more or less continually periods of shortage and surplus during which the farmers and milk buyers will alternately control prices. Consequently producers protect themselves during periods of low price level by decreased production and consumers protect themselves during periods of high prices by decreased consumption. During periods of low price level the metropolitan press is disinterested, but when milk becomes scarce and farmers demand prices in accordance with the ratio of supply to demand the metropolitan press demands "investigation" which reflects back to the farmer, through a larger decline in consumption than would normally have taken place without agitation.

Under normal conditions consumption does not vary widely from season to season or from year to year except as there is a gradual increase in the population. Owing to the fact that the supply of milk is affected by sunshine, rainfall, prices of feed, and many other factors, the immediate market may be temporarily flooded with milk or a pronounced shortage may exist which will materially affect prices while the number of cows has not materially changed. The maintenance of the proper number of cows in the country is more important than an excess or shortage in the immediate supply.

2. BUTTER AND CHEESE AS A BASIS OF MILK PRICES.

Milk for direct and indirect consumption is produced by the same animal, the dairy cow, but many people do not properly distinguish between the two classes of products. One group, milk for direct consumption, is both bulky and perishable and consequently must be produced approximately as consumed. Milk utilized for indirect consumption in the form of butter and cheese is converted into a relatively non-bulky and non-perishable product which is most economically handled when largely produced in the summer months and stored for winter use. High winter grain costs play little or no part in butter prices, but they are the paramount factor in milk prices. Winter butter prices are normally the summer butter prices plus storage charge. Summer milk prices are approximately summer butter prices, but winter milk prices bear little or no relation to butter. Winter milk prices are more a question of feed. Any system that puts milk prices on a butter basis puts a premium on summer milk and does not take due cognizance of winter feeding conditions.

3. BUTTER AND CORN AS A BASIS OF MILK PRICES.

Certain individuals in the state of Wisconsin formulated a method of determining the price of milk for the condenseries of that state. It is briefly as follows: 100 pounds of milk shall be worth the price of the number of pounds of butter fat in the milk, times the Chicago market price of 92 score butter, plus a differential of 6 cents for fat over butter; to this shall be added the value of 85 pounds of skim milk which shall be determined on the basis that 100 pounds of skim milk shall be equivalent to one-half the price of one bushel of corn.

Milk prices for urban centers like New York and Chicago usually are about 50 per cent. higher in the winter than in the summer months, while butter prices are usually but 20 per cent. higher when the same seasonal comparison is made. Corn prices are usually always much higher in the summer than in the winter months. Consequently such a price fixing policy for whole milk based on butter and corn prices puts an added premium on summer milk.

Table 1 presents the percentage variation in the price for Chicago whole milk, butter, cheese and milk on the basis of corn and butter. In the case of butter, cheese and milk, the prices are those that actually existed in the Chicago market from 1908 to 1915. In calculating the price of milk based on corn and butter market the Chicago butter price and the Wisconsin farm price of corn for the period 1908 to 1915 were used.

TABLE I.—*Monthly variation in the prices of butter and cheese and milk based on Chicago market and upon the prices of butter and corn.*

	Butter.	Cheese.	Chicago Whole Milk.	Butter and Corn
January	109.7	103.6	118.3	104.9
February	103.5	106.7	114.4	101
March	102.2	106.7	106.5	100.2
April	98.9	100.7	93.5	98.7
May	91.0	94	77.1	93.2
June	90.3	93	69.9	94
July	89.6	93.7	83	94
August	91.0	97.5	94.7	95.6
September	96.8	98.3	97.4	101
October	101.1	99.5	107.1	102.3
November	109.0	101.1	115.7	104.9
December	116.1	103.6	118.3	109.5
Average	100	100	100	100

Cheese prices vary from about 93 per cent. in June to 107 per cent. in February; butter from about 90 per cent. to 115 per cent.; milk as sold on the Chicago market varied from about 70 per cent. to about 118 per cent.; milk based on the price of corn varied from about 94 per cent. to about 110 per cent. Such systems of determining prices for whole milk that will not give the proper spread in prices will inevitably fail as they will localize production in the more profitable months.

4. COMPETITIVE COMMODITY PRICE.

The feed and pastures utilized in the production of urban milk can be used in the production of beef, mutton, and to a limited extent the production of pork. Obviously milk prices must follow the prices of competitive commodities, otherwise production will be restricted. Down the ages farmers have had but one method of telling what the public wanted, namely, through price. If wool is high in price and hogs are relatively low business acumen advised farmers that the public wanted more wool and less pork. Although farmers have been advised by well-intending but uninformed individuals to raise more of this and less of that, farmers have been and will continue to be patriotic by following the dictates of the past and produce the commodity that pays best. Consequently, assuming a constant volume of milk is desired, any price system based upon the price of competitive commodities will operate without much injustice to buyers and sellers. Any system of price fixing which does not take proper cognizance of the principles of competitive commodity prices is doomed to failure.

5. YEAR RATIOS OF FEED AND LABOR.

Various branches of the Agricultural Colleges in New York, Connecticut, Rhode Island, Vermont, New Hampshire, Maine, Massachusetts, New Jersey, Michigan, Indiana, Illinois, Iowa and Minnesota have, through investigation, determined the amounts of feed and labor involved in producing 100 pounds of milk. In many cases this work is remarkably uniform while in others there is some disparity. The ratio of winter milk which is produced from barn-fed cattle to the summer pasture milk, the variations in the amount of fat and the method of calculation produces marked differences in cost. It has been unfortunate that these differences have not been brought to the attention of all interested parties as it has tended to reflect upon the preciseness of the work.

The herd cost of milk production involves the production of milk and the young stock reared on the same farms. The cow cost of milk production involves the production of milk from the cows disregarding the young stock. In determining milk prices the two methods will usually give approximately the same results. In contrasting results from different regions and different years the cow cost of milk production is the most satisfactory method.

As you are all aware these costs are expressed in terms of pounds of different classes of feeds and hours of labor. To these are applied the fluctuating values for feed and labor as a proper basis of fluctuating milk prices. Needless to say that a system that will so fluctuate prices should prevent radical changes in the volume of milk. When milk prices are based on these year amounts of feed and labor they should not be uniform, but should vary from month to month. One of the best guides for fluctuating prices of milk is past price ratios. It may be said in general that between the December price of milk and the June price of milk there is a spread of 50 per cent. from the mean year price. Expressed in another way the June price is usually about 60 per cent. of the December price. Again the December price may be said to be about 170 per cent. of the June price. This method of determining milk prices commends itself because the prices of milk will fluctuate with the value of feed and labor and the season of the year and prevent serious injustice; on the other hand, the system is not flexible enough in that it does not take due cognizance of wide fluctuations in milk volume.

One criticism of this method appears in Bulletin 292 of the Wisconsin Agricultural College. The pertinent criticism centers around the following sentence quoted from the above-mentioned article:

"One weakness of the Pearson formula arises from the fact that the price of milk is the major factor in determining the prices of many articles of cow feed." Consequently high prices for whole milk are followed by high prices for the feeds involved in milk production. With this conclusion I can not wholly agree. Turning to Bulletin 629 of the United States Department of Agriculture one finds that all the dairy cows in the United States consume about 8.6 per cent. of the corn, 5.0 per cent. of the oats, 4.4 per cent. of the barley and 23.2 per cent. of the hay.² The real significance of the proportions of feed consumed by cows producing milk for urban market to which they apply the so-called formula is understood only when one considers that 15 per cent. of the cows will probably supply that market with fluid milk. It seems to the author that further comment on this criticism is unnecessary.

² Taylor, H. C., Price Fixing and the Cost of Farm Products, Wis. Exp. Sta. Bul. 292, pp. 14-15, May, 1918.